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09/924,653

08/08/2001

Kee Yean Ng

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04/06/2006

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EXAMINER

SANTIAGO, MARICELI

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/924,653

Applicant(s)

NG, KEE YEAN

Examiner

Mariceli Santiago

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

The Amendment, filed on December 12, 2005, has been entered and acknowledged by the Examiner.

Cancellation of claims 14-18 has been entered.

Claims 1-13 are pending in the instant application.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (US 3,555,335) in view of Mueller et al. (US 6,417,019).

Regarding claims 1 and 9, Johnson discloses a light emitting device, comprising a base substrate with a cavity and a trough to form a reflective cup, a projecting platform (31) at the base of the cavity, a light emitter (30) mounted on the projecting platform, the light emitter being smaller in outline than the projecting platform (Fig. 5). At the time the invention was made, it would have been an obvious matter of design engineering to a person of ordinary skill in the art to provide the projecting platform having vertical walls since applicant's claimed vertical walls does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teaching applied. Furthermore, one skilled in the art would reasonable expect applicant's invention to perform equally well with either slanted walls disclosed by Johnson or the claimed vertical walls since both platform walls perform the same function of supporting the

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light emitting device structure at an elevated position within the reflective cup. Accordingly, it would have been an obvious matter of design engineering to modify the device of Johnson to obtain the projecting platform having vertical walls as specified in claim 1.

Johnson discloses the use of a phosphor-based filter disposed over the light emitter, however, fails to disclose the limitation of a coating having an adhesive material and particles of another substance, wherein the coating is applied over and in direct contact with the light emitter in the cavity, the platform, the cavity, and the trough, the coating being evenly settled on and around the light emitter within the cavity, thus being an evenly dispersed, uniform thickness particle coating over the light emitter with a thickness of the particle coating being constant with respect to the light emitter.

In the same field of endeavor, Mueller discloses a light emitting device (Figs. 3 and 5) comprising a base substrate with a cavity to form a reflective cup, a light emitter within the cavity of the reflective cup, and a phosphor coating layer comprising an adhesive layer and phosphor particles dispersed within the adhesive layer (Column 5, lines 49-52), the phosphor coating layer being applied over and in direct contact with the light emitter and the cavity, the phosphor coating absorbing at least a portion of the primary light emitted by the light emitting device and emitting secondary light having a wavelength longer than a wavelength of the primary light. Mueller further exemplifies that "One of ordinary skill in the art will recognize that the homogeneity of the composition and thickness of phosphor film can be improved by, for example, rotating the LED wafer on which film is deposited in eccentric circles during the deposition process" (Column 8, lines 32-44), thus, although not explicitly stated one skilled in the art would reasonable construe from Mueller's teachings the provision of a evenly dispersed, uniform thickness particle coating over the light emitter with a thickness of the particle coating being constant with respect to the light emitter as recognized within the level of skill in the art.

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Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate a uniform thickness particle coating as disclosed by Mueller in the light emitting device of Johnson in order to provide a phosphor coating absorbing at least a portion of the primary light emitted by the light emitting device and emitting secondary light having a wavelength longer than a wavelength of the primary light.

In regards to the limitation of "*the coating is a viscous slurry when applied over and in direct contact with the light emitter in the cavity, and hardens when cured after being applied over the light emitter in the cavity, wherein when the coating, when being a viscous slurry, is applied over the light emitter, the platform, the cavity, and the trough allow the particles in the coating to be evenly settled on and around the light emitter within the cavity before the coating is cured*", the recitations pertain to a method (i.e. a process) of applying the phosphor coating, consequently, claim 1 is considered a "product-by-process" claim. In spite of the fact that a product-by-process claim may recite only process limitations, it is the product and not the recited process that is covered by the claim. Further, patentability of a claim to a product does not rest merely on the difference in the method by which the product is made. Rather, is the product itself which must be new and not obvious. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Accordingly, the structure implied by the process steps would be considered for assessing the patentability of product-by-process claims over the prior art (see MPEP 2113). As such, the structure disclosed by the combination Johnson-Mueller, that is an evenly dispersed, uniform thickness particle coating over the light emitter with a thickness of the particle coating being constant with respect to the light emitter, is considered to meet all the structural limitations of the final product as specified in claim 1.

Regarding claim 2, Johnson discloses a light emitting device wherein the platform is formed is an integral part of the base substrate (Fig. 5).

Regarding claim 6, Johnson discloses a light emitting device wherein the reflective cup provides reflection of light emitted by the light emitter (Column 1, lines 40-43).

Regarding claim 7, Johnson discloses a light emitting device wherein the cavity has a sloping wall which is of frusto-conical form surrounding the projecting platform, and the sloping wall and the platform are coated with a reflective material (Column 3, lines 65-68).

Regarding claim 8, Johnson-Mueller fails to disclose the limitation of the reflective material being silver. It is well known in the art to use silver as coating for reflective elements based on its high reflective optical properties. One skilled in the art would reasonable contemplate the selection of a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have the reflective material being silver, since the selection of silver as a reflective material is within the level of skill in the art.

Regarding claim 10, Johnson-Muller discloses a light emitting device wherein the particles are of fluorescent or luminescent substance to absorb light of one wavelength and re-emit light of a different wavelength (Column 5, lines 49-52). Same motivation for combining as stated in the rejection of claim 1 above applies.

Regarding claim 11, Johnson-Muller discloses a light emitting device wherein the fluorescent or luminescent substance is phosphor and the adhesive material is epoxy (Column 5, lines 49-52). Same motivation for combining as stated in the rejection of claim 1 above applies.

Regarding claim 13, Johnson discloses a light emitting device wherein the light emitter is selected from the group of an LED and a laser diode (Column 1, lines 40-43).

Claims 3-5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (US 3,555,335) in view of Mueller et al. (US 6,417,019), and further in view of Sasaki et al. (JP 62-235787).

Regarding claims 3-5, Johnson-Mueller fails to disclose the limitations of the platform is a discrete component attachable to the base substrate, wherein the platform and the base substrate are fabricated from different materials, and the base substrate comprises a metal and the platform comprises a material able to efficiently dissipate heat generated by the light emitter. In the same field of endeavor, Sasaki discloses a light emitting device (Fig. 1) comprising a base substrate (24) with a cavity and a trough to form a reflective cup, a projecting platform (36) at the base of the cavity, a light emitter (25) mounted on the projecting platform, the light emitter being smaller in outline than the projecting platform, the platform (36) being a discrete component attachable to the base substrate, wherein the platform and the base substrate are fabricated from different materials (metal and insulating material), and the base substrate comprises a metal and the platform comprises a material able to efficiently dissipate heat generated by the light emitter, the platform structure provides for an excellent heat sink structure (see Abstract). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the separate platform structure disclosed by Sasaki in the light emitting device of Johnson-Mueller in order to provide a heat sink effect for the light emitting assembly.

Regarding claim 12, Johnson-Mueller fails to disclose the limitation of a lens positioned over the light emitter and the coating material. In the same field of endeavor, Sasaki discloses the use of a lens assembly (30) positioned over the light emitting device in order to focus and direct the light emitted by the light emitting device (Page 452, Column 5). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to

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incorporate the lens assembly of Sasaki in the light emitting device of Johnson-Mueller in order to focus and direct the light emitted from the light emitting device.

### ***Response to Arguments***

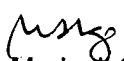
Applicant's amendment, filed December 12, 2005, with respect to claim 1 has been entered and overcomes the rejection under 35 USC § 112-1<sup>st</sup> paragraph. Accordingly, the rejection of claims 1-13 has been withdrawn.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 3/31/06  
Mariceli Santiago  
Primary Examiner  
Art Unit 2879